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AUTHOR Baker, Linda M.
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ABSTRACT

The goals of educational partnerships between schools and businesses or associations often include the purchase of educational technology and its integration into the daily life of schools. A study was conducted to determine the common features of successful technology partnerships and factors that contribute to success. After preliminary analysis of the literature, data were collected through telephone interviews with 23 representatives of 15 educational partnerships involving businesses, schools, and universities. Professionals from all three groups enjoyed partnership participation, and over half expected their partnerships to continue. Twenty-one respondents considered their programs successful, although many thought that evaluation had not been entirely adequate. Many problematic features were identified, including failures of planning and implementation and logistic problems. Partners sometimes disagreed about the technology or the roles of partners and teachers, but conflicts generally were resolved. Choosing people and sites carefully was identified as one of the most important components of success. Responses emphasized that partnerships, while they have great potential for enhancing education, require hard work for success. An appendix contains the interview protocol. (Contains 18 references.) (SLD)

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ED 362 150

Title:

Promoting Success in Educational Partnerships Involving Technology

Author:

Linda M. Baker

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Background

Schools have always received some measure of community support, such as parental assistance, volunteer efforts, donations of money and equipment and provision of needed expertise. But fueled by reports such as a Nation at Risk, calls for school reform by almost every major political candidate and ceaseless media accounts of apparent educational failure, there is a growing public perception that American schools are in a crisis professional educators can't fix by themselves. One positive result of this perception is more organized and substantial involvement in schools by influential community institutions, which band together in "educational partnerships" to provide resources and services.

Such educational partnerships are increasing dramatically. There are thousands of them, big and small, and more all the time; the National Alliance of Business (NAB) estimated 140,000 in 1985. As might be expected with a growing phenomenon, these partnerships are as diverse in their purposes as they are in their membership. Small collaborations, such as those between a single local school and a neighborhood business, are usually focused on providing a particular service for a specific school group, such as business mentors for science students or tutors for at-risk kids, or they may provide in-kind assistance such as free printing of school materials. They may also donate items to the school. Larger partnerships, involving bigger businesses or corporations, and/or universities and groups of schools, usually have more ambitious and far-ranging goals, including effecting comprehensive school reform.

For many reasons, the goals of these larger educational partnerships often include the purchase of educational technology and promotion of its integration into the daily life of schools. Educational technology is new and exciting, has a high public profile and is often cited in popular and professional literature as a catalyst for major changes in teaching and learning. At the same time, however, technology can be expensive and adopting it can be complex, so that even if it is thought desirable, the purchase and effective use of educational technology may tax the means and experience of individual schools or school districts. It is therefore likely that professionals in businesses, universities and schools interested in educational technology will find themselves reaching out to and working with other community groups to make possible together what might not be possible alone.

For those contemplating such collaborations and those currently involved in one, it would be helpful to know the experiences of others. A description of what has worked in educational technology partnerships from the point of view of those who have been involved with one should therefore be very useful.

Yet unfortunately, while quite a bit has been written about educational partnerships in general, not very much of it has been specific to technology. This is true whether you examine the business, educational or technology management literature.

The older business literature tends to focus on the perception that schools are doing an inadequate job preparing the future workforce as a rationale for business initiating involvement in education through partnerships. More recent analyses often reflect a clear-eyed reassessment of the efficacy of partnership arrangements, frequently citing corporate frustration with slow or superficial change and a lack of "accountability" for resources used. (see Chion-Kennedy, Edelstein, Mann, Rist) Both the early and the recent analyses sometimes refer in passing to a lack of technical sophistication among today's students but they generally don't single out technology or technology partnerships for special notice.

Educational analysts largely divide into two camps, those who consider partnerships as one more form of school change initiative and those who consider them as policy-making bodies. Like business observers, school change writers do not distinguish technology partnerships from other collaborations. Instead these writers point to the difficulty of effecting comprehensive and lasting change regardless of the innovation. (See Fullan, Lieberman and Miller, Sarason, Senge, Sirotnik). An exception here is the work of Larry Cuban, who focuses on the failure of teachers to adopt educational technology in significant ways (see Cuban). However, Cuban does not speak to partnerships.

Educational policy analyses consistently emphasize that no matter who does it, educational policy-making is largely political, as the process of determining "who gets what, when and how" is essentially a process of exercising power and influence no matter what the reasons or who the involved parties. (see Campbell and Mazzoni, Easton, Lasswell, Pawley). This literature is just beginning to speak to partnerships as policy-making bodies and so does not separately consider technology partnerships.

Last, the technology management literature has a substantial group of analyses concerned with both technology and partnerships. But these studies are largely focused on examining the efficacy of university/corporate research and development collaborations and their success in developing and

promoting commercially-viable and competitive technologies. (see Fassin, McBrierty and O'Neill, and Phillips). The findings of these studies might be relative to educational partnerships, at least where universities are involved with schools, but that connection has not yet been directly drawn.

To summarize, while it would be beneficial for professionals in business, universities and schools who might work together to know what factors help lead to success in educational partnerships involving technology, not much research has yet been done which is specifically helpful.

Research Questions

The major research question for this then study is:

What are the common features of successful technology partnerships?

Related research questions are:

How is success defined and measured?
Which features are identified as successful most often?
Which features are identified as problematic most often?
Does the nature of the group involved (i.e., business, school, university) make a difference in which features are identified as successful or problematic?
What suggestions for success are made by partnership participants?

The wording of these questions indicates an emphasis on identifying factors which contribute to the success of technology partnerships from the point of view of those currently involved in one. The intent of these questions is therefore descriptive and pragmatic rather than conceptual or theoretic. It is hoped answers to these questions will be of practical help to professional people contemplating or involved in partnerships. It is only just now that many partnerships are of sufficient duration that their participants can assess their progress and draw conclusions to share with others, so answers to these questions should prove timely and helpful.

Method

Preliminary analysis was done on a pool of professional literature, journal articles, grant reports and other assessment documents of educational partnerships. The pool resulted from a comprehensive review of education, business and technology management literature, and published Department of Education (DOE) grant reports. (SeeDanzberger for example) These articles, grants and reports were examined closely to see what features of partnerships they identified as helpful or problematic and what suggestions they made for improvement.

The results of this preliminary analysis pointed to the following elements as contributing to success: shared vision; clearly-defined goals; an institutionalized decision-making structure; local decision-making; continuity among partnership personnel; allowing sufficient time for change to occur; and provision of professional development time and training to teachers. This analysis also suggested that as outside policy-making bodies often charged with allocating much-needed resources and composed of people from disparate institutions with different standards, operating procedures and goals, ("culture"), partnerships hold the potential for much conflict. (See Sirotnik for example)

However, these preliminary results had some limitations. First, materials specific to technology partnerships were limited. Second, the reports and articles which were available were universally positive in tone and far more likely to identify successful features than problematic ones, probably reflecting a natural tendency to play up successes when reporting publicly on a project. Yet it could be as helpful for others to know what didn't work as what did. Third, the documents examined often didn't distinguish the disparate views of particular participants. Instead they were consensual, making it impossible to determine if, for example, the business partner disagreed with the school partner on what was successful and why. Last, because there were not very many summary articles and reports readily available, few were the results of systematic, formal research into partnerships, and identification of features which lead to success was not a major emphasis of much of what was written, the preliminary analysis was based on a relatively small amount of data. For these reasons a second method was used to elicit more complete information.

Additional data was collected nationally by a 45-minute, open-ended telephone interview with 23 representatives of 15 educational partnerships. Each had at least two years' experience with a partnership, collaboration or consortium of some complexity, involving at least two parties and administration of a large federal grant specifically focused on educational technology. (DOE FIRST [Fund for the Improvement and Reform of Schools and Teaching] grants, with an average award of $117,214 per year for two or three years.) For most of the respondents 1992 marks the final year of a three year grant which began in 1989. For some, the grant ended last year or this past summer, so each has completed or is completing their project. Many had written or contributed to one or more assessment reports as part of their grant reporting requirements, and so had the experience judging the success of their projects.

All 23 respondents were somehow involved with managing the federal grant and/or the partnership related to it, being the ones empowered by their institutions to make decisions and allocate resources for shared partnership activities. Five people were school district representatives of some kind, five represented corporations, eleven were from universities and two were from state or regional education departments or centers.

Results of the preliminary analysis were used along with the study research questions to guide design of the interview questionnaire, which solicited comments on how each partnership organized collaborative work, how the representative felt about being part of a partnership, how the partnership evaluated success and what features aided or impeded success. Respondents were also asked to state their advice to people beginning partnerships. (see Appendix for interview protocol)

Statements in response to the questionnaire were examined for similarities and then grouped into categories to make dominant patterns apparent. These patterns are discussed in the results section below, presented along with some individual statements which were not widely replicated but appear nonetheless interesting or insightful.

Results

There is little question that professionals from all three groups, universities, businesses and schools or school organizations, generally enjoyed being part of a partnership. Many respondents described their participation as "stimulating", "challenging" and even "fun", presenting a definite "change" from their usual activities which afforded them "opportunities" for both personal and professional growth. Most also felt greatly rewarded by their contact with a new set of "colleagues", whom they often described as "friends" as well as "innovative", "creative" and "exciting" peers.

About a third of the respondents saw the partnership as a means to expand their range of personal "connections" and "professional opportunities". A third also appreciated their chance to be involved in a "real" project and watch the educational process unfold from an "insider's view" rather than from a distance as an outside professional observer or lay citizen. And almost half found pride and gratification that they had been part of something which "made a difference", elicited "good feedback" or had an "impact" on education. (Categories are not mutually exclusive. Respondents could give two or more answers to a single question and so be counted in more than one category).

Respondents also liked being part of a partnership for the unique benefits they felt collaboration brought, including much-needed "money and other resources", the "synergy" afforded by sharing "information", "ideas" and "purposes" and the "new perspectives" brought to educational problems and circumstances when multiple people from disparate backgrounds interact.

In addition, over half the respondents signaled their intent to continue the partnership in some way after the initial three-year grant period ends and federal monies disappear. Some of these were writing other grants for support, while others planned to absorb ongoing costs among involved institutions. Of the 11 respondents who said "no" or "maybe" to continuing their partnerships, none said they would never participate in another partnership and most were actively soliciting new partners for new purposes. The general consensus on participating in partnerships appears to be, as two respondents put it, "Go for it!"

Measuring Success

However, because participants generally enjoyed being part of a partnership does not mean their partnerships were successful, so **how did partners define and measure success?** This question is particularly important in light of the preliminary analysis, which suggested that differences in institutional cultures, which affect what kinds of results are valued, typical reward structures and standard operating procedures, and differing institutional agendas for participating in partnerships can cause serious disagreements about what constitutes success and how to recognize when it is reached.

In this group, only two respondents were not sure if their project had been successful overall, one citing that she was too "close to it to tell objectively", and the other that he regretted "they could only go so far since it was important not to go too fast." The 21 others described their projects variously in laudatory terms such as "a model others can use", "110% effective" or "it reinforced our initial beliefs."

15 of the respondents stated that their projects used specific concrete products to gauge success, including improvement in student test scores, production of curriculum units and lesson plans, development of multi-media protoypes or educational software, and measurements of technology usage, such as hours spent in computer labs, or cost of on-line connect time. The others used either accomplishment of grant goals, such as attainment of "objectives" or "outcomes" or adherence to "benchmarks" and "timelines", or qualitative measures of student and/or teacher attitudes and behavior, such as "comments",

"feedback" and "evaluations", as measures of accomplishment. Many had a mix of ways to gauge their success, including formal evaluation by paid, outside evaluators, often university staff.

Even though the majority of respondents felt their project was successful overall, they nonetheless expressed reservations about how evaluation was done, 6 persons saying they either didn't agree with the methods used to gauge the success of their projects or weren't sure of their effectiveness, and many of the 17 others agreeing overall with the methods used but with some specific concerns. These concerns were divided about equally between those who wished more traditionally rigorous, quantitative assessments of progress and those who thought qualitative measures more appropriate. Comments indicating a desire for more rigor included "need more evaluation at the school level-- it was hard to document what the teachers were doing", "there was no control group", "I'd prefer more concrete benchmarks", and "there were little pre- and post-test differences", while those arguing for more qualitative measures stated "it's hard to measure long-term goals", "I'd prefer to judge investment in people, not scores", "traditional evaluation took too much time for the results gained", "I'd add qualitative measures of attitudes or the energizing effect of collaboration", and "usual methods are merely 'add-ons' at end of the project, but no one will give you grant money for formative evaluation."

The concerns expressed about the effectiveness of evaluation in this group suggest that measuring success is one of the more problematic aspects of a partnership. While on the one hand partners are convinced they have been largely successful, on the other hand they are not satisfied with how that is proved. Their measures of success often appear to be at odds with their perceptions of success. This may be because participants feel torn between their generally positive inside experience of collaboration and the need to justify its fruits to influential outsiders, such as grant officers, tenure committees or school district administrators, in terms they can accept. Or it could be that differing cultural expectations of partnership institutions do mean differing perceptions of measuring success. Or it could be something else altogether. This study does not sufficiently address **why** these differences occur, but only points out that they do, just as the preliminary analysis suggested they might, which is something those contemplating a partnership should consider for frank discussion and negotiation among partners when deciding how to evaluate their projects.

Problematic Features

What features of the partnership were identified as problematic most often? Answers to this research question came from three sources, the responses to questions about what partnership features impeded success, what partners didn't like about being in a partnership and what things partners disagreed about.

Failures of planning and implementation

Failures of planning were mentioned most often as impeding success, including picking project "school districts too far apart geographically", having a "too fast production schedule" or a "contract too binding", "contradictions in project goals", "too much money spent on hardware with none for training" and "not designing technology centrally enough into the project".

It is relatively easy to recognize failures of planning after the fact when what hasn't worked becomes apparent. It is much harder to anticipate problems as you are beginning a project, especially when technology partnerships are a relatively new phenomenon, local conditions vary dramatically and there are few established guideposts to follow. As one respondent said, "This is an experiment, and we are learning as we go along." The simplest conclusion to be drawn from these experiences then, is to devote as much time as possible to planning, trying to anticipate problems, for "the more you plan, the easier it is to implement". But recognize there will be many problems which cannot be anticipated or controlled.

Planning problems were followed in importance by implementation problems such as excessive "changes in personnel", and introducing the project on too grand a scale with "the 'big pitch' which scared school participants".

Some of these barriers to success can't be anticipated or well controlled either, such as excessive turnover in personnel, which was also mentioned prominently among things respondents didn't like about being part of a partnership. When people change, it takes time to "know the new ones", or "bring them up to speed", and when key people go, they sometimes "take the commitment of their institutions and their resources with them". Yet while participants can discourage each other from leaving partnerships, they can't prevent each other from going, particularly since participation in the partnership is seldom anyone's main job, and most need to meet the demands of their primary job first. Personal and institutional agendas

change through time, and preservation of the original membership in the partnership is rarely more important to participants than these other agendas.

Stress

In discussing what they didn't like, many of the respondents also decried the stress associated with belonging to a partnership, stress mostly linked to the amount of time and emotional energy that collaboration requires. Many partnership participants felt their institutions did not provide them with sufficient personal support for their positions, mentioning that they needed more "clerical help", more "staff" or "assistants", and most importantly, "time", particularly release time from their regular institutional duties. In a few cases, participation in a partnership was even added on top of someone's other job duties with no extra support at all, "I inherited it when someone else left."

One corporate officer and one university professor both felt they deserved a "promotion" for the work they'd put in but clearly didn't expect that their institutions would reward them that way for their participation. It appears partnerships are still viewed as peripheral commitments by many organizations, and their success relies quite a bit on the willingness of involved parties to go beyond what's provided out of personal commitment.

Logistical problems

On a more basic level, respondents also frequently mentioned persistent logistical problems which arose from the complexity of group managing a large project. These ranged from major decisions such as deciding who would "manage the money" or be "responsible to outside auditors", to minor but consistently annoying hassles over details such as "conflicting school and corporate calendars", "different business office procedures and techniques", and "free parking at the university". One university grant coordinator pointed out that her university was not used to producing anything but written materials, and so its procedures couldn't easily support her work with outside multi-media producers who required large amounts of cash and rapid production and payment schedules to do their work.

Respondents found that resolving these logistical challenges took a surprising amount of time, yet if left untended, could erupt into bad feelings. One school district technology coordinator laughingly referred to trying to park his car at the university to attend partnership meetings without getting a ticket he had to

personally pay as a "constant thorn in his side" which, although minor, was a reminder to him that he was "not on my turf".

These differences in routine institutional procedures were surface manifestations of more profound instutitional differences which often caused considerable conflict. These differences surfaced in respondent answers about disagreement among partners. Only four of the 23 respondents reported no conflict of note, one explaining that disagreements varied by the people involved with "no major consistent" pattern, and another adding that their small working group made "agreement more possible than it would be among a large number of people". All of the others reported some disagreements.

In fact, the representatives of one project contacted declined to participate altogether because their collaborative work had proved so difficult the first several years ..nat in the interest of remaining together in this better final year they didn't wish to "drag it all up again" by being interviewed. In addition, one multi-media production company was considering revising corporate policy to do educational media development entirely in-house rather than through partnerships with outside educational organizations because the "investment in time, money and energy" involved in collaborations was deemed too taxing for the return.

Disagreements between partners

The kind of disagreements most of the other respondents denoted varied by the organizations involved, as different concerns surfaced among partnership representatives than between representatives and teachers or representatives and technology vendors. Among partnership representatives three areas of disagreement were mentioned most often; allocation of resources, partnership roles, and pedagogy.

Representatives often had to choose among many competing uses for the money, technology and services their partnership had to provide schools. There were therefore hard choices to be made on who and what would be funded, what hardware and software would be chosen, and what direction staff time and energies would take. As one project director said, "We can think of 40 things to use the money for and can only do 3 or 4, so deciding what you're NOT going to do with resources is important... It was hard for us to say no."

Dissension also arose about what role each partner was to take in the project. Often it was not clear what each organization was expected to provide or each representative to do, and so representatives felt others were not doing their jobs or, as one project coordinator said, "holding up their part of the bargain."

This lead to resentment. In addition, as projects evolved, there was often a reevaluation of partnership roles, some partners becoming more active than others in different stages of the project. Agreeing on who should take an active role at any given time also caused dissension.

Last, partners did not always agree on pedagogy, which was clearest in discussions on the proposed content of educational materials, such as curricular units, lesson plans, computer programs purchased or developed for use in classrooms, and prototype educational CD-ROMs or videos. The director of research and development for a national professional association setting standards for the teaching of science pointed to the problem in his particular project. "There is a wide range of philosophical differences on how to teach science..the clash of ideas sometimes led to belittling and ridiculing of opposite positions."

In addition to these primary disagreements, as mentioned earlier, partners also disagreed to a lesser extent about the methods used to assess accomplishment of project goals, some wanting more "concrete benchmarks" than others, and about the project implementation process, particularly how to speed it up.

Disagreements about technology

Because these partnerships all involved educational technology, respondents singled out one kind of disagreement among partners for special mention. A little over a fourth of the disagreements mentioned were between other partners and the technology vendor in partnerships which had major hardware and software companies as members. Three kinds of problems were mentioned most frequently-- slow delivery of promised goods (hardware and software), unavailability of proffered training, and serious contention about the content of materials being collaboratively developed. In the first two cases, other partners felt the service by the technology partner "after the sale" was not as anticipated, either because the vendor primarily viewed the partnership as a chance to sell products and services rather than a true collaboration or because, although well-intentioned, many vendors were either too busy to guarantee delivery schedules and training as planned, or were too large and bureaucratic to secure the commitment of corporate headquarters to partnership activities. The principal investigator on one grant said, "Over time we got more (goods and training), but I'm not sure we got more than usual people who buy hardware. Corporate headquarters of company "A" wouldn't commit and company "B" is always reorganizing, so it was too little, too late on gear and training."

The problem over developing materials collaboratively is a good indication of how different organizational cultures can cause conflict. In two cases serious differences arose between the educational partners and the media production staff of the technology partner over the content of educational materials produced. Naturally enough, the educational staff placed primary emphasis on the teaching and learning objectives of whatever was being produced and the media producers were primarily interested in its interest level to students. One grant principal investigator said working with a scriptwriter epitomized this conflict in approach. "It was hard to get him to realize our ideas. We had instructional design goals, he had entertainment goals. It was a knock-down-drag out to build both into the script. The differences between us were very stark...clear differences in conception which were hard to blend."

Two respondents also mentioned "battles" between hardware and software suppliers trying to make their various technologies compatible in ways that would serve partnership goals. Project managers felt caught in between two competing interests, unable to coordinate efforts to go forward.

Disagreements between partners and teachers

Two major kinds of disagreements arose between partnership representatives and teachers. The problem mentioned most often was competing ideas over the amount and content of training offered. Teachers often preferred elementary training in how to operate a computer and use basic application software, while partnership representatives were emphasizing classes in integration of the computer into classroom activities and development of original educational materials. One school district technology coordinator described this as, "We were determined to integrate technology and the teachers were determined not to."

The other primary disagreement was over assessment and evaluation methods. Project managers were often required by their grant to regularly evaluate progress and sometimes had concerns about teacher performance, so they were interested in timely and telling evaluations. Teachers, on the other hand, found some evaluation procedures intrusive or overly time-consuming and tedious.

To summarize, all but four of the partnership participants questioned were able to describe disagreements among partners. The nature of the disagreements varied by who was interacting, but there was dissension across a broad range of people and activities, including about the most fundamental work of the partnerships such as allocating money, assigning roles, choosing among educational alternatives,

providing goods and services, training staff and evaluating progress. This pattern suggests that partnerships do not escape the conflict which the preliminary analysis suggested characterizes other educational policymaking bodies. Responses also suggest that the addition of technology into a partnership introduces a level of complexity which can present unique challenges.

Conflict resolution

Because disagreements can present major obstacles to success, it is also helpful to know how partners tried to resolve conflict and whether the methods they chose were successful. It's interesting to note, then, that regardless of their position or the kind of conflict they were discussing, respondents overwhelmingly described their primary method of resolving conflict as building "consensus" by "talking it out".

Consensus

Each described a process of dispute resolution which began with asking for alternatives, describing the advantages and disadvantages of each suggestion from each partner's point of view, and then choosing one alternative through "negotiation" and "compromise". Many mentioned they thought this process represented the essence of collaboration-- group decision-making through discussion and negotiation. One corporate education representative characterized it as "looking for a compromise. Seeing how we can change so that everybody enjoys a winner..a good partnership will give everybody something to win about." Others described it as reaching a "common understanding" or "tandem decision-making".

Most recognized, however, some limits to this method of resolving conflicts. First, it can take a long time, as one project director noted, "Collaborative work has its own timeline. It is much slower than when telling them (others) what to do. That isn't bad...it's just a different pace which takes adapting to."

In addition, many responses pointed to a set of attitudes which must be present for this kind of conflict resolution to work. People must trust each other, know each other's working style, and be willing to critically examine and change their own opinions and occasionally, behavior. The same person continued, "You must be willing to work as much on the relationship between people as on tasks. That was a personal learning for me as a project director. You must be open to change and be a co-learner." Another project coordinator felt facilitating group process was the most challenging part of her project, indicating that most adults, even teachers, have no formal training in collaboration and do not automatically know

how to solve problems and make decisions together. The needed attitudes and actions were therefore learned, sometimes painfully, in the process of working together.

Role of the project coordinator/manager

Many of the responses outlined a critical role in the dispute resolution process for the project director or coordinator, those partnership managers who are responsible for the day-to-day operation of the project. One said she would only hire project coordinators like theirs who had "experience running complex projects and getting people to work together". Another said a crucial part of her role as project coordinator was to do the "summing up" at the end of meetings which helped people choose among alternatives.

In addition, if people were not able to reach consensus, which many said happened occasionally, the project coordinator or director often made a final determination, sometimes by "delaying a decision until a better time arose", or "dropping one idea and substituting another" or even by "taking the project and running with it", i.e.. making the decision he or she thought best for the project. When this last happened, the coordinator or director usually justified the decision to the others by reference to the original purposes of the project as represented in project documents or by citing grant demands made by the government funding agency. Respondents clearly linked group decision-making to the idea of a partnership, and felt it "heavy-handed" when either they, or someone else in the partnership, made decisions unilaterally. As one said, "It takes longer to make decisions together but telling people what to do doesn't work, so it works out better this way in the long run."

In three of the 23 cases this process of consensus didn't work at all. Two of these cases involved school districts and hardware or software companies, and one concerned a school district and a group of teachers. In the first cases, the school district partners found the vendors to be uninterested in true collaboration. They claimed corporations either disappeared after the sale of hardware, providing little further support, or overly limited school district participation in joint activities with tightly worded partnership agreements. In one partnership between a school district and a multi-media development company, a contract outlining the duties and obligations of each partner was considered too restrictive by the school district representative, who felt left out of decision-making about the educational content of the product. Yet the same contract was considered routine by the corporate representative, used to the highly

competitive software industry in which protection of corporate creative processes is paramount in any collaborative work.

This misunderstanding points to a clear difference of organizational culture as reflected in the documents and standard operating procedures which embody organizational values. The corporate representative explained school district concerns as resulting from a scheduling problem, "It was not anyone's fault. It was just circumstances. There are differences in the way schools and corporations carry out their work day. We're in a production mode whether schools are in summer break or not, so if kids and teachers aren't around, I make do with other kids, other classes."

She added that the consensual process of solving conflicts such as this was different for her as a corporate partner. "Production and creative decisions are made by huge numbers of people bantering about ideas in a software company. It takes time, and feelings get hurt. I was relieved to work in a situation (in the schools) where people liked my ideas." She detailed a process in which she presented the partnership with production company ideas about the educational content of the medium being produced, followed by some discussion in which there was minimal objection on minor issues ("no red flags") after which she tried to "follow the consensus" in the subsequent production. She didn't feel she had to "fight for my ideas" as she would have done in a corporate environment.

However, the school district representative on the same project felt the district had only minimal impact on the educational content of the product. She cited contract provisions which would financially penalize the school district for making any changes which slowed down the production schedule which she felt inhibited her group from persisting in their pedagogical concerns. The corporate representative apparently did not realize her school district counterpart felt this strongly, as she thought there were no major disagreements on content.

False consensus

This points to a danger focused on by another of the respondents-- the problem of acceding to a false consensus. The desires to get along amicably, make deadlines and meet the goals of the project and demands of the funding agency can cause people to agree to what they think everyone else wants even if they or their organization feels what is being proposed is a bad idea-- a kind of "group think". The director of research and development responsible for one project referred to this as the "Abilene paradox"

after the work of management professor Jerry Hall, saying "a lot of decisions are based on people agreeing because they think it is what the group wants, but no one wants it really." To avoid this false consensus, this director prefers open and pointed disagreement to acquiescence in the interest of collegiality or expedience.

'Exiting'

The unresolved conflict between teachers and the school district was over the content of training and demonstrates the success of the "exit" strategy in influencing group processes. School district partnership representatives, sensitive to the outlines of the grant underlying the partnership, wanted teachers to integrate technology into the classroom, bypassing or hurrying through the process of learning the basics of computing and common application programs like word processing. But teachers did not want integration classes and chose not to attend them, no matter how many were offered by the district, at what times and for what pay. They "exited"; a powerful ploy used by those not in power to frustrate the aims of those above them with whom they don't agree. This conflict was never resolved to the district's satisfaction, and this part of their project went unrealized as a result.

"Exiting" was also used as a strategy by partnership representatives in many of the other projects, even where consensus did work to solve most issues. At least five respondents mentioned partners who had withdrawn, usually the corporate partners, individual school districts or individual schools. Four others mentioned changes in personnel, moving partnership representatives around until they found a "stable working group" which could "deliver on what they promised." Indeed, as mentioned earlier, high turnover in personnel was cited in three cases as a major obstacle to accomplishment of project goals, as new people had to be "brought up to speed" before the partnership could proceed.

Four partnership representatives also mentioned threatening to exit, i.e.. stating their intent to withdraw partnership resources from school districts, schools or teachers who were not fulfilling their obligations. These "threats" were often first carefully stated in writing with follow-up telephone calls or site visits by project directors or coordinators. Usually such threats were effective. Where partners or participants withdrew it was of their own accord, few were "dropped" by the others.

In summary, most partnerships resolve conflicts by identifying and weighing alternatives and talking things through to a consensus, a time-consuming process of negotiation and compromise which partners

recognize as requiring special skills in group process, and a willingness by partners to learn new things, be open, trust each other, and change positions.

In addition, project coordinators or directors, as the day-to-day managers of most technology partnerships, frequently have a special role to play in conflict resolution as the ones who make partners confront each other and the issues, who summarize positions so decisions can be made, and who take over decision-making when an impasse is reached. They are often the facilitators of conflict resolution and the guardians of group process. It is seen as part of their job by the others involved.

Also, where consensus fails to resolve disputes, the "exit" strategy is often used by partnership representatives, who either withdraw or threaten to withdraw their organizational resources from the partnership. Exiting can be represented formally by threats to retract manifested in documents, phone calls or visits, or informally by non-participation in meetings or activities, i.e., partners can leave or they can fade away. They are seldom booted out.

Last, beware of false consensus. The desire to please each other and forge ahead can lead people to agree to what they don't really like or think practicable, which can create problems when differing organizational cultures and standard operating procedures undermine underexamined goals.

What features are identified as successful most often? What advice do participants have for others beginning partnerships?

Answers to these research questions came from reponses to three questions on the questionnaire including, What features of their partnership lead to success?, What would you change if you could begin again? and What advice do you have for those beginning partnerships? Answers to the first and third of these questions overlapped significantly, so they will be discussed together below.

When respondents were asked what they would change about their partnerships if they could start over, 8 of 23, almost a third, said nothing. Half of these didn't identify any major problems in the course of their partnerships, and the other half didn't feel the problems they experienced were debilitating enough to warrant making any changes. Overall these representatives were fairly satisfied with the way things went.

Choose people and sites carefully

The other two-thirds would change their partnerships in a variety of ways, most frequently by including either different people or a wider range of people. Eleven references were made to being 'choosier' in who the partnership included. These were usually made by representatives of the initiating partner, the organization which first solicited other partners and drafted the grant proposal. These respondents felt the push to find sites and encourage participation sometimes brought people and organizations together without due consideration for their true willingness or ability to actively participate. Several representatives mentioned the importance of being able to pick who they worked with, whether that was someone in a partner organization with whom they "already had a working relationship", someone who could demonstrate their ability to "deliver what promised" or someone who chose to be included rather than being assigned by administrative staff.

Respondents would also be more selective in picking project sites, choosing fewer districts or schools, sites geographically closer to the project administration point, or those which represented "ideal conditions". Two even mentioned having some kind of competitive process for inclusion in the project. One project director who had worked with a large number of schools and districts over the three years of her project said, "I would be choosier...look for optimal conditions rather than anyone who wanted to work, and put conditions on schools to be selected. Have them put in writing what they will do to support us."

Eight references were made to including a wider range of people, usually to ensure critical support from interested "stakeholders", particularly principals. As the people primarily responsible for decision-making and allocation of resources in school buildings, principals are crucial to the success of any educational change effort, technology projects included. One project director said about administrative support for her teacher training project, "There should be some really. For the most part, they didn't support. There wasn't an administrator at the schools who knew and who cared. It made it hard for teachers to request individual support." One school district technology director who had helped choose sites for a project by mailing a survey to the schools added, "Now I'd go to individual schools and interview principals and technology teachers...I'd do more personal interfacing with principals. It was more important than I realized."

Some answers to Question 8, (Do you have any advice for those starting partnerships now which will help them be successful?) corroborated this emphasis on including all important stakeholders. Three references were made to soliciting comments from impacted groups during the grant writing and planning stages to secure their ideas and interest early, and others mentioned including everyone at all levels in every phase of the project (planning, implementation, evaluation) and securing organizational, rather than merely personal, buy-in. This last suggestion reflects the experience of projects where a critical person or persons exited during the project, taking their organizational commitment with them. Representatives who had experienced this problem suggested getting an institutional commitment in writing before the project begins. Others mentioned "keeping the original personnel if possible".

Technology

The remaining answers to the question about what partnership representatives would change were all specific to improving the technical aspects of the project, but there was no clear pattern to the responses. Instead each responded about the particulars of their own project. However, several mentioned an important point which was assumed, though not stated, in most responses--technical stability and reliability. In every project technology was seen as the means to a desired end, usually some improvement in teaching and learning, an end which could not be accomplished if the critical technology needed was absent, broken, unreliable or overly complex. Having dependable technology is critical to these kinds of projects.

The largest set of responses beyond this basic point involved improving teacher training, suggesting that training is viewed as critical to the success of many of the projects but can be hard to do effectively. Suggestions here were varied, including "begin with teachers beyond the basic learning level", "ask for one year to train", "use technology 'mentor' teachers for peer training", and "monitor the quality of in-service training".

Respondents also made a group of suggestions about production of educational materials, including "get a production staff with educational experience", "use existing materials rather than try to develop your own", "leave plenty of time for production", "teach the government [DOE] to be flexible in production schedules" and most interestingly, "be entrepreneurial...use the government seed money to form a partnership with a production house to develop educational materials and use the profits from the product to fund district technology needs and projects."

Have clear roles and expectations

When giving advice to those starting partnerships (Question 8) respondents overwhelmingly pointed to the necessity of outlining clear, specific roles and responsibilities for each partner which are stated in writing and agreed to before the project begins. Suggestions for inclusion in these kind of written agreements were a "few clear, simple and direct statements of project goals", a "formal team structure", "defined outcomes", and a timeline for accomplishment of project "benchmarks". The purposes of such written agreements were stated variously as to "make expectations clear", "assign responsibilities", allow for consideration of each partner's "real constraints", get to "know each other's strengths" and make sure the team is "moving in the same direction, not on individual agendas." One corporate education manager described it as setting up a "win/win situation" from the beginning, and advised re-negotiating the agreement every year to adapt it to current conditions, making it a "living document".

Cultivate collaborative skills

Another large group of advice responses centered on cultivating the personal characteristics that collaboration requires. Partnership representatives suggested involving or developing people who were flexible, open, creative, willing to "share ideas" and capable of working on a basis of trust and respect. They should also be daring, "willing to push the limits of what is possible" . In addition, four references were made to the need to be dedicated and hardworking, i.e., people for whom this is not just a job, but a passion. The primary reason for the latter suggestion is because of the huge amount of time collaborative partnership work requires, often far beyond what people feel they are paid for or what their institutions anticipated when assigning them.

Pay attention to group process

The last major group of suggestions for those starting partnerships had to do with group process and dynamics. Here the most frequent suggestion was to meet often and communicate regularly so that people feel included and know what's going on. Several representatives also mentioned picking a good project coordinator or director, someone who could prove a strong 'anchor' for the project. And others advised openly recognizing outside constraints on the group, such as limits on time, staff and resources, "systemic influences" such as school district politics, and the impact of cultural differences between organizing institutions. One school district technology coordinator said, "You must understand and accept the culture

differences. If you don't, then there will be continual problems. For example, university people must get something publishable out of an experience-- but teachers couldn't care less about that. The need to publish has implications for how you spend time... this must be understood and acknowledged."

To summarize, the primary advice of this seasoned group of partnership representatives was to be specific and clear about the goals of the partnership and to clearly define in writing before the project begins what each partner will be expected to do to advance those goals. They also strongly recommended promotion of the personal values and characteristics which make collaboration easier-- qualities of flexibility, openness, trust and respect for others mixed with creativity, daring and dedication. Last, respondents thought it wise to pay attention to group process by meeting regularly, talking about things, relying on the guidance of a strong project coordinator or director, and acknowledging systemic limits on what can be accomplished.

Are there differences between partners in what features are seen as successful or problematic?

Answering this question for the group of respondents as a whole proved difficult, largely because corporations were underrepresented among those interviewed. (5 of 23 respondents). Where more than one person was interviewed from a project (8 of 23 cases), the responses of each were compared to each other to look for differences. Many of those differences have been discussed in earlier analysis. However, more definitive conclusions would be possible with a larger corporate sample.

It is interesting to note, however, why businesses are not more represented. Business partners were the hardest to find to interview, in many cases because either their personal, or their institutional, commitment was relatively short-term and they were no longer active, working members of the partnership. In the special case of technology vendors as partners, corporate involvement often ceased or was sharply curtailed shortly after the original purchase or donation of hardware and software. Businesses which had long-term, ongoing commitments to a partnership were rare, even though as one corporate education manager avowed, "it's the only way to be truly effective...roll up your sleeves and get involved in every aspect."

Implications

It is clear that partnerships are a growing phenomenon, part of the ever-increasing overlap between schools and other major community institutions, particularly businesses and universities. People who involve themselves in partnerships generally enjoy their participation, and have high hopes their collaboration will make education b[illegible] reby profiting society generally.

These high hopes, however, can mean partners do not anticipate many of the problems which managing a complex project can bring, the conflict which can result when organizations of disparate nature try to work together, and the time and energy it can take to work it all out successfully. Partnerships are not the panacea to educational ills some have suggested. They are hard work-- **and** hard work usually **added to** the already busy lives of many of the professionals involved. This is all the more true with technology partnerships, which often add a whole level of complexity to already complicated situations.

Yet the needs partnerships rose to fill aren't likely to go away soon, and the trend in education, and perhaps society in general, is increasingly toward disparate groups of people finding ways to work together for their mutual benefit. One project coordinator summed it well, reacting with excitement to her role as a "bridge" between the research, corporate and education communities, a "link" which, even if temporary, greatly enriches the experience and understanding of everyone involved. This "bridging" role is still developing, and as such is fraught with peril for those involved, but it also brings the stimulation of challenge and possibility.

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Appendix I. Interview Protocol

Name of respondent: _____ Name of Interviewer: _____
Title of respondent: _____ Permission to quote?: yes ____
Respondent contact numbers : no ____
phone: _____ e-mail: _____
Project Title : _____

Descriptive Questions

1. **Who are the partners?**

a. Organizational Name: _____
Organizational Type: _____

b. Organizational Name: _____
Organizational Type: _____

c. Organizational Name: _____
Organizational Type: _____

d. Organizational Name: _____
Organizational Type: _____

2. What role(s) was each partner originally designed to play?

Organization a: _____
_____
_____

Organization b: _____
_____
_____

Organization c: _____
_____
_____

Organization d: _____
_____
_____

3. Who initiated the partnership?

Description of Partnership Operations

1. How does your project coordinate partnership activities?

a) Do you have regular meetings? yes_____ no_____

If yes,

how often? _____

where? _____

who attends ?_____

is there an agenda? yes _____ no _____

If yes, who sets the agenda?

If yes, how are items chosen for discussion?

If no, how is the discussion organized?

If no, (your partnership does NOT have formal meetings),
how do partners decide what needs doing and how to do it?

b) How else do partners coordinate their activities?

telephone?

correspondence? (notes, e-mail, letters, memos, fax etc.)

(probe) any other ways you can think of?

c) who makes most of the day-to-day project decisions?

why this person(s)?

Partnership Affect

1. What do you like about being part of a partnership or collaboration?

(probe) anything else you like?

2. What do you dislike about being part of a partnership/collaboration?

(probe) anything else you dislike?

3. when disageements about partnership activities arise, how are they resolved? (Give example?)

(probe)
any other ways of resolving disagreements?

4. on which partnership activities are partners most likely to disagree?

(probe) any other disagreements you can think of?

Perceptions of Success

1. What was the original role of educational technology in the project?

2. How central was that role to the entire scope/activities of the project?

2. Has the role of technology changed as the project progressed? yes _____ no _____
If yes, how has it changed?

why did it change?

3. Do you feel the partnership has been successful in helping attain the project's technical goals?
yes ___ no ____

If yes, what features of the partnership helped technology succeed?

(probe) Any other ways the partnership helped support technical goals?

If no, what features of the partnership impeded success?

(probe) Any other aspects of the partnership which impeded success?

4. How does the partnership gauge success?

Are there concrete products? yes _____ no _____

If yes, what are they?

If no, how else is success gauged?

(probe) any other ways the partnership gauges success?

5. Do you personally agree with these ways of gauging success? yes _____ no _____
Why or why not?

5. If you could begin again , what would you change about the partnership?

(probe) is there anything else you would change?

6. Do you have any advice for people forming partnerships now that will help them be successful?

(probe) any other advice?

7. Would you predict the partnership will continue after the grant is continued? yes _____ no_____

If yes, where will the money come from?

Have you submitted other grants? yes _____ no _____

If no, why not?

7. Has your project been formally evaluated? yes _____ no _____
If yes, internally? _____ externally?_____ both? _____
Would you be willing to share those evaluations with us? yes _____ no _____

8. Would you like a copy of the results of this survey when it is completed? yes _____ no _____
If yes, send to : _____
_____
_____
_____

9. Do you have anything you'd like to add?